

JAN

90358

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: BEN SACKETT Examiner #: 73489 Date: 3/31/03
Art Unit: 1626 Phone Number 305-6889 Serial Number: 10/049463
Mail Box and Bldg/Room Location: CM1 3814 Results Format Preferred (circle): PAPER DISK E-MAIL

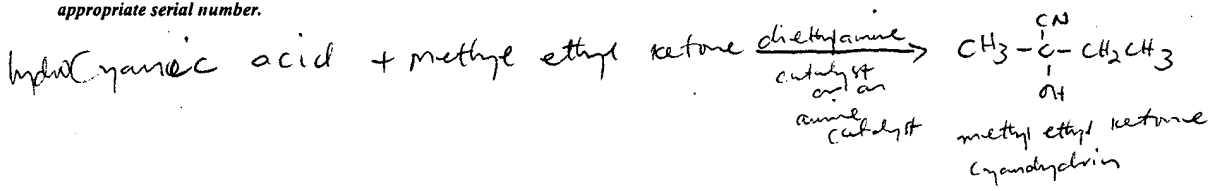
If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for making methyl ethyl ketone Cyanohydrin
Inventors (please provide full names): Croizy et al.

Earliest Priority Filing Date: 7/29/99

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*



Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

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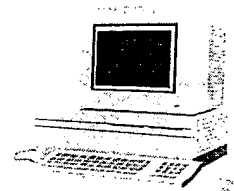
STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>[Signature]</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/>
Searcher Phone #: <u>4498</u>	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <input checked="" type="checkbox"/>	Questel/Orbit _____
Date Searcher Picked Up: <u>4/2/03</u>	Bibliographic <input checked="" type="checkbox"/>	Dr.Link _____
Date Completed: <u>4/2/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>10</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>10</u>	Other _____	Other (specify) _____

BioTech-Chem Library

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the BioTech-Chem searcher* who conducted the search *or contact*:

Mary Hale, Supervisor, 308-4258
CM-1 Room 1E01

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* (Example: 1610)
- *Relevant prior art found, search results used as follows:*
 - ☐ 102 rejection
 - ☐ 103 rejection
 - ☐ Cited as being of interest.
 - ☐ Helped examiner better understand the invention.
 - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)
- *Relevant prior art not found:*
 - ☐ Results verified the lack of relevant prior art (helped determine patentability).
 - ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms at the **Circulation Desk CM-1**, or send to Mary Hale, CM1-1E01 or e-mail mary.hale@uspto.gov.

=> d his

(FILE 'REGISTRY' ENTERED AT 17:17:38 ON 02 APR 2003)

DEL HIS
E C5H9NO/MF
L1 469 S E3
L2 242 S L1 AND NR>=1
L3 227 S L1 NOT L2
L4 30 S L3 AND ?CYAN?/CNS
L5 48 S L3 AND ?NITRIL?/CNS
L6 68 S L4,L5
L7 3 S L6 AND BUTANENITRILE AND 2 HYDROXY 2 METHYL
E METHYL ETHYL KETONE/CN
L8 1 S E3
E DIETHYLAMINE/CN
L9 1 S E3
E HYDROCYANIC ACID/CN
L10 1 S E3
SEL RN L7
L11 1 S E1-E3/CRN

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CMI 1207-20-01-001
jan@cmi.cmu.edu

FILE 'HCAPLUS' ENTERED AT 17:20:18 ON 02 APR 2003

L12 60 S L7
L13 11 S L7/P
L14 24426 S L8 OR METHYLETHYLKETONE OR METHYL ETHYLKETONE OR METHYLETHYL
L15 27282 S L10 OR HCN OR HYDROCYANIC ACID OR HYDROGEN CYANIDE
L16 20861 S L9 OR DIETHYLAMINE OR (DIETHYL OR DI ETHYL OR DIET)()AMINE
L17 25 S L12 AND L14-L16
L18 10 S L13 AND L17
L19 10 S L13 AND L14
L20 7 S L13 AND L15
L21 1 S L13 AND L16
L22 1 S L21 AND L19,L20
L23 10 S L13,L18-L21 NOT L22

=> fil reg

FILE 'REGISTRY' ENTERED AT 17:23:44 ON 02 APR 2003

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 1 APR 2003 HIGHEST RN 501325-53-7

DICTIONARY FILE UPDATES: 1 APR 2003 HIGHEST RN 501325-53-7

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:

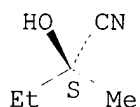
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can tot l7

L7 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 174849-22-0 REGISTRY

CN **Butanenitrile, 2-hydroxy-2-methyl-, (2S)- (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Butanenitrile, 2-hydroxy-2-methyl-, (S)-**
FS STEREOSEARCH
MF **C5 H9 N O**
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

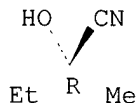
2 REFERENCES IN FILE CA (1962 TO DATE)
2 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 134:109910

REFERENCE 2: 124:224570

L7 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2003 ACS
RN 122045-29-8 REGISTRY
CN **Butanenitrile, 2-hydroxy-2-methyl-, (2R)- (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Butanenitrile, 2-hydroxy-2-methyl-, (R)-**
OTHER NAMES:
CN **(R)-Butan-2-one cyanohydrin**
FS STEREOSEARCH
MF **C5 H9 N O**
SR CA
LC STN Files: AGRICOLA, BEILSTEIN*, CA, CAPLUS, CASREACT, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5 REFERENCES IN FILE CA (1962 TO DATE)
5 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 134:109910

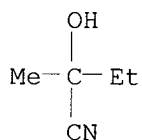
REFERENCE 2: 119:43947

REFERENCE 3: 118:58234

REFERENCE 4: 115:91338

REFERENCE 5: 111:173178

L7 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2003 ACS
 RN 4111-08-4 REGISTRY
 CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Butyronitrile, 2-hydroxy-2-methyl- (6CI, 7CI, 8CI)
 OTHER NAMES:
 CN 2-Butanone, cyanohydrin
 CN 2-Hydroxy-2-methylbutanenitrile
 CN 2-Hydroxy-2-methylbutyronitrile
 CN 2-Methyl-2-hydroxybutyronitrile
 CN Butanone cyanohydrin
 CN Ethyl methyl ketone cyanohydrin
 CN Methyl ethyl ketone cyanohydrin
 FS 3D CONCORD
 DR 73683-34-8
 MF C5 H9 N O
 CI COM
 LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,
 CHEMLIST, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, TOXCENTER, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: EINECS**, NDSL**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

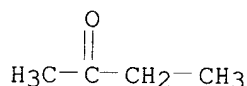
52 REFERENCES IN FILE CA (1962 TO DATE)
 52 REFERENCES IN FILE CAPLUS (1962 TO DATE)
 7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:321544
 REFERENCE 2: 136:247644
 REFERENCE 3: 135:107069
 REFERENCE 4: 135:107068
 REFERENCE 5: 135:29904
 REFERENCE 6: 134:233091
 REFERENCE 7: 134:131253
 REFERENCE 8: 134:109910
 REFERENCE 9: 133:146265
 REFERENCE 10: 130:324940

=> d ide can 18

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
 RN 78-93-3 REGISTRY

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN 3-Butanone
 CN Butanone
 CN Ethyl methyl ketone
 CN MEK
 CN **Methyl ethyl ketone**
 FS 3D CONCORD
 DR 135311-02-3
 MF C4 H8 O
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
 DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,
 GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
 MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO,
 SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

19505 REFERENCES IN FILE CA (1962 TO DATE)
 173 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 19529 REFERENCES IN FILE CAPLUS (1962 TO DATE)
 10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:214695
 REFERENCE 2: 138:214657
 REFERENCE 3: 138:214651
 REFERENCE 4: 138:214296
 REFERENCE 5: 138:213944
 REFERENCE 6: 138:212813
 REFERENCE 7: 138:212788
 REFERENCE 8: 138:212782
 REFERENCE 9: 138:209349
 REFERENCE 10: 138:209218

=> d ide can 19

L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
 RN 109-89-7 REGISTRY
 CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:

CN **Diethylamine (8CI)**

OTHER NAMES:

CN DEA

CN N,N-Diethylamine

FS 3D CONCORD

MF C4 H11 N

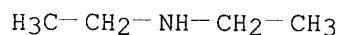
CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

14561 REFERENCES IN FILE CA (1962 TO DATE)

883 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

14581 REFERENCES IN FILE CAPLUS (1962 TO DATE)

2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:207281

REFERENCE 2: 138:205463

REFERENCE 3: 138:205229

REFERENCE 4: 138:205051

REFERENCE 5: 138:200070

REFERENCE 6: 138:197741

REFERENCE 7: 138:197696

REFERENCE 8: 138:197629

REFERENCE 9: 138:194052

REFERENCE 10: 138:192439

=> d ide can 110

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 74-90-8 REGISTRY

CN **Hydrocyanic acid (8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN Carbon hydride nitride (CHN)

CN Evercyn

CN Formic anammonide

CN Formonitrile

CN Hydrogen cyanide

CN Prussic acid
CN Zyklon B
DR 341972-31-4
MF C H N
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS,
BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,
CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,
DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,
ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB,
IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA,
PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL,
VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

HC N

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11482 REFERENCES IN FILE CA (1962 TO DATE)
213 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
11489 REFERENCES IN FILE CAPLUS (1962 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:209211
REFERENCE 2: 138:206858
REFERENCE 3: 138:205462
REFERENCE 4: 138:201810
REFERENCE 5: 138:195277
REFERENCE 6: 138:195216
REFERENCE 7: 138:195200
REFERENCE 8: 138:190465
REFERENCE 9: 138:186996
REFERENCE 10: 138:177624

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 17:24:08 ON 02 APR 2003
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FILE COVERS 1907 - 2 Apr 2003 VOL 138 ISS 14
FILE LAST UPDATED: 1 Apr 2003 (20030401/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr 122

L22 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:101098 HCAPLUS

DN 134:131253

TI Method and catalyst for making **methyl ethyl ketone** cyanohydrin

IN Croizy, Jean-francois; Esch, Marc; Esquirol, Gilbert

PA Atofina, Fr.

SO PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DT Patent

LA French

IC ICM C07C253-00

ICS C07C255-12

CC 23-19 (Aliphatic Compounds)

Section cross-reference(s): 45, 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001009085	A1	20010208	WO 2000-FR2136	20000725
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	FR 2796939	A1	20010202	FR 1999-9859	19990729
	FR 2796939	B1	20010914		
	EP 1206445	A1	20020522	EP 2000-958611	20000725
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL			
PRAI	FR 1999-9859	A	19990729		
	WO 2000-FR2136	W	20000725		

OS CASREACT 134:131253

AB **Me Et ketone** cyanohydrin is prep'd. in high yield and selectivity by reacting **hydrocyanic acid** and 2-butanone in the presence of catalytic amts. of **diethylamine**.

ST butanone cyanohydrin prep'n; **diethylamine** hydrocyanation catalyst butanone cyanohydrin prep'n

IT Hydrocyanation catalysts

(**diethylamine** for the conversion of **hydrocyanic acid** and 2-butanone in the manuf. of **Me Et ketone** cyanohydrin)

IT Hydrocyanation

(of **hydrocyanic acid** and 2-butanone in the manuf. of **Me Et ketone** cyanohydrin)

IT 109-89-7, **Diethylamine**, uses

RL: CAT (Catalyst use); USES (Uses)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

IT 74-90-8, Hydrogen cyanide, reactions
 78-93-3, Methyl ethyl ketone,
 reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

IT 4111-08-4P, Methyl ethyl ketone
 cyanohydrin

RL: SPN (Synthetic preparation); PREP (Preparation)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Anon; HOUBEN-WEYL METHODEN DER ORGANISCHEN CHEMIE BAND VIII 1952, P274
- (2) Saito, M; HCAPLUS
- (3) Saito, M; JPN KOKAI TOKKYO KOHO P7
- (4) Union Carbide Corp; WO 8500166 A 1985 HCAPLUS

IT 109-89-7, Diethylamine, uses
 RL: CAT (Catalyst use); USES (Uses)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

RN 109-89-7 HCAPLUS

CN Ethanamine, N-ethyl- (9CI) (CA INDEX NAME)



IT 74-90-8, Hydrogen cyanide, reactions
 78-93-3, Methyl ethyl ketone,
 reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

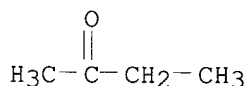
RN 74-90-8 HCAPLUS

CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)



RN 78-93-3 HCAPLUS

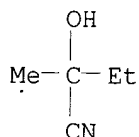
CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



IT 4111-08-4P, Methyl ethyl ketone
 cyanohydrin
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (method and catalyst for making **Me Et**
ketone cyanohydrin)

RN 4111-08-4 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)



=> d bib abs hitstr tot 123

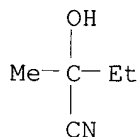
L23 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:224394 HCAPLUS
 DN 134:233091
 TI Preparation of plant-derived biopesticides and their synthetic analogs
 IN Coats, Joel R.; Peterson, Christopher J.; Tsao, Rong; Eggler, Aimee L.;
 Tylka, Gregory L.
 PA Iowa State University Research Foundation, Inc., USA
 SO U.S., 18 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6207705	B1	20010327	US 1997-828190	19970321
PRAI	US 1996-13956P	P	19960322		

AB Biopesticide compns. comprise a purified glucosinolate breakdown product wherein a starting material for the purified glucosinolate breakdown product is isolated from a crambe, rapeseed, flax, cassava, or mustard plant. Glucosinolate breakdown products, such as 1-cyano-2-hydroxy-3-butene, di-Me ketone cyanohydrin, **Me Et ketone** cyanohydrin, 3-cyano-3-hydroxy-1-propene, etc., and their analogs, as well as monoterpenoids are purified from plant exts. or synthetically prepd. The biopesticides are used against insects, mites, ticks, and nematodes as contact pesticides, aquatic pesticides, or fumigants.

IT **4111-08-4P, Methyl ethyl ketone**
 cyanohydrin
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
 (prepn. of plant-derived biopesticides and their synthetic analogs)

RN 4111-08-4 HCAPLUS
 CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)

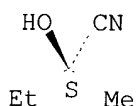


RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

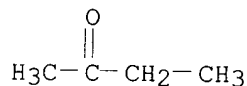
L23 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2003 ACS
 AN 1996:154053 HCAPLUS
 DN 124:224570
 TI The first recombinant hydroxynitrile lyase and its application in the synthesis of (S)-cyanohydrins
 AU Foerster, Siegfried; Roos, Juergen; Effenberger, Franz; Wajant, Harald; Sprauer, Achim

CS Inst. Org. Chemie Univ., Stuttgart, D-70569, Germany
 SO Angewandte Chemie, International Edition in English (1996), 35(4), 437-9
 CODEN: ACIEAY; ISSN: 0570-0833
 PB VCH
 DT Journal
 LA English
 AB The authors overexpressed *Manihot esculenta* hydroxynitrile lyase (meHNL) in *Escherichia coli*. Enantioselective addn. of **hydrocyanic acid** to several aldehydes and ketones was by enzyme immobilized on nitrocellulose and using diisopropyl ether as solvent was demonstrated.
 IT **174849-22-0P**
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
 (purifn. and characterization of recombinant hydroxynitrile lyase and its application in synthesis of (S)-cyanohydrins)
 RN 174849-22-0 HCAPLUS
 CN Butanenitrile, 2-hydroxy-2-methyl-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **78-93-3**, 2-Butanone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (purifn. and characterization of recombinant hydroxynitrile lyase and its application in synthesis of (S)-cyanohydrins)
 RN 78-93-3 HCAPLUS
 CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



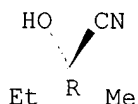
L23 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2003 ACS
 AN 1993:443947 HCAPLUS
 DN 119:43947
 TI Improved purification of an (R)-oxynitrilase from *Linum usitatissimum* (flax) and investigation of the substrate range
 AU Albrecht, Jens; Jansen, Inge; Kula, Maria Regina
 CS Inst. Enzymtechnol., Heinrich-Heine-Univ., Juelich, D-5170, Germany
 SO Biotechnology and Applied Biochemistry (1993), 17(2), 191-203
 CODEN: BABIEC; ISSN: 0885-4513
 DT Journal
 LA English
 AB The purifn. of (R)-oxynitrilase (EC 4.1.2.10) from *Linum usitatissimum* has been improved considerably. The enzyme is obtained from seedlings in 60% yield by fractional salt pptn. followed by ion-exchange and hydrophobic-interaction chromatog. Final gel-permeation chromatog. yields a protein with a specific activity of 53 units/mg at pH 4.1. The N-terminal sequence is reported and microheterogeneity demonstrated. The substrate range was investigated using (R)-oxynitrilase immobilized on Eupergit and tert-Bu Me ether as solvent. The addn. of **HCN** to various aliph. ketones and aldehydes is catalyzed by the enzyme, while arom. ketones are not converted. (R)-butan-2-one cyanohydrin was synthesized on a preparative scale and the product characterized.
 IT **122045-29-8P**, (R)-Butan-2-one cyanohydrin

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, by immobilized oxynitrilase of flax)

RN 122045-29-8 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 74-90-8, Hydrogen cyanide, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aliph. ketones and aldehydes in oxynitrilase presence)

RN 74-90-8 HCAPLUS

CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)

N

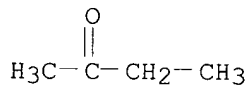
HC

IT 78-93-3, Butanone, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oxynitrilase of Linum usitatissimum)

RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



L23 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:58234 HCAPLUS

DN 118:58234

TI Enzymic preparation of (R)-methyl and (R)-ethylketone cyanohydrins

IN Effenberger, Franz; Ziegler, Thomas; Hoersch, Brigitte; Heid, Stephan

PA Degussa A.-G., Germany

SO Ger., 4 pp.

CODEN: GWXXAW

DT Patent

LA German

FAN.CNT 1

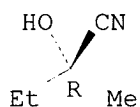
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4102327	C1	19920604	DE 1991-4102327	19910126
PRAI	DE 1991-4102327		19910126		
OS	MARPAT 118:58234				

AB (R)-Ketone cyanohydrins are prepd. for use in the manuf. of .alpha.-hydroxy-.alpha.-ethyl- or .alpha.-hydroxy-.alpha.-methyl-carboxylic acids from the corresponding ketone and HCN using (R)-oxynitrilase in an org. solvent. The enzyme is prepd. from almonds and is preferably immobilized. Almond (R)-oxynitrilase 100 units (1000 units/mL) was adsorbed onto Avicel cellulose 1 g (preswollen in Na acetate buffer pH 4.5) in diisopropylether 20 mL. **Methylethyl ketone** 5 mmol, and anhyd. HCN 400 .mu.L were added and the mixt. incubated at 0.degree. for 4 h. Yield of (R)-

methylethyl ketone cyanhydrin was 80% with an enantiomeric excess of 76%.

IT 122045-29-8P
 RL: PREP (Preparation)
 (prepn. of, enzymic, from ketone, with immobilized oxynitrilase)
 RN 122045-29-8 HCAPLUS
 CN Butanenitrile, 2-hydroxy-2-methyl-, (2R)- (9CI) (CA INDEX NAME)

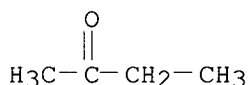
Absolute stereochemistry.



IT 74-90-8, **Hydrogen cyanide**, reactions
 78-93-3, **Methylethyl ketone**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactions of, in prepn. chiral cyanohydrins with immobilized oxynitrilase)
 RN 74-90-8 HCAPLUS
 CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)

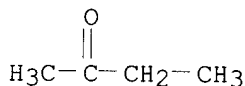


RN 78-93-3 HCAPLUS
 CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



L23 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2003 ACS
 AN 1991:491338 HCAPLUS
 DN 115:91338
 TI Enzyme catalyzed reactions. 9. Enzyme-catalyzed synthesis of (R)-ketone cyanohydrins and their hydrolysis to (R)-.alpha.-hydroxy-.alpha.-methyl carboxylic acids
 AU Effenberger, Franz; Hoersch, Brigitte; Weingart, Franz; Ziegler, Thomas; Kuehner, Stefan
 CS Inst. Org. Chem., Univ. Stuttgart, Stuttgart, 7000/80, Germany
 SO Tetrahedron Letters (1991), 32(23), 2605-8
 CODEN: TELEAY; ISSN: 0040-4039
 DT Journal
 LA English
 OS CASREACT 115:91338
 AB (R)-Ketone cyanohydrins (R)-HOCMeCN (I) are obtained with high enantioselectivity from aliph. ketones and **HCN** in org. solvents using (R)-oxynitrilase (EC 4.1.2.10) as catalyst. Acid catalyzed hydrolysis of I affords the corresponding (R)-.alpha.-hydroxy-.alpha.-methyl carboxylic acids without measurable racemization:
 IT 78-93-3, **Ethyl methyl ketone**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (enantioselective addn. of **hydrogen cyanide** to, in presence of oxynitrilase)
 RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)

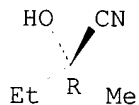


IT 74-90-8, Hydrogen cyanide, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (enantioselective addn. of, to ketones in presence of oxynitrilase)
 RN 74-90-8 HCAPLUS
 CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)

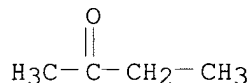


IT 122045-29-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. and hydrolysis of)
 RN 122045-29-8 HCAPLUS
 CN Butanenitrile, 2-hydroxy-2-methyl-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L23 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2003 ACS
 AN 1989:573178 HCAPLUS
 DN 111:173178
 TI Asymmetric hydrocyanation of a range of aromatic and aliphatic aldehydes
 AU Matthews, Barry R.; Jackson, W. Roy; Jayatilake, Gamini S.; Wilshire,
 Colin; Jacobs, Howard A.
 CS Dep. Chem., Monash Univ., Clayton, 3168, Australia
 SO Australian Journal of Chemistry (1988), 41(11), 1697-709
 CODEN: AJCHAS; ISSN: 0004-9425
 DT Journal
 LA English
 OS CASREACT 111:173178
 AB A range of aryl, alkyl and heterocyclic aldehydes have been treated with
HCN in the presence of the Inoue catalyst, (R,R)- or
 (S,S)-cyclo[phenylalanylhistidyl]. Most aryl aldehydes with
 electron-donating substituents in the m- or p-positions give high
 enantiomeric excess (e.e.) values (.gtoreq.80%), but aryl aldehydes with
 strong electron-withdrawing substituents gave moderate e.e. values
 (.ltoreq.50%). These moderate values are believed to be due to partial
 racemization of the product cyanohydrins in the presence of the mildly
 basic catalyst. In contrast to the reactions of aryl aldehydes, reactions
 of alkyl aldehydes and of ketones gave low e.e. values (.ltoreq.30%), an
 explanation is proposed.
 IT 78-93-3, 2-Butanone, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (hydrocyanation of, catalyst for)
 RN 78-93-3 HCAPLUS
 CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)



IT 74-90-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrocyanation, stereoselective, of arom. and aliph. aldehydes)

RN 74-90-8 HCAPLUS

CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)



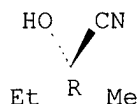
IT 122045-29-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 122045-29-8 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl-, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L23 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2003 ACS

AN 1985:199688 HCAPLUS

DN 102:199688

TI Properties of a microsomal enzyme system from *Linum usitatissimum* (linen flax) which oxidizes valine to acetone cyanohydrin and isoleucine to 2-methylbutanone cyanohydrin

AU Cutler, Adrian J.; Sternberg, Margarete; Conn, Eric E.

CS Dep. Biochem. Biophys., Univ. California, Davis, CA, 95616, USA

SO Archives of Biochemistry and Biophysics (1985), 238(1), 272-9
CODEN: ABBIA4; ISSN: 0003-9861

DT Journal

LA English

AB Microsomal preps. from flax seedlings have recently been shown to convert L-valine to acetone cyanohydrin, the precursor of the cyanogenic glucoside linamarin (Cutler, A. J.; Conn, E. E., 1981). Further details of this 4-step biosynthetic sequence and also details of the analogous reactions in lotaustralin biosynthesis have been obtained. The lotaustralin precursor, 2-methylbutyraldoxime, is the best substrate for cyanide prodn. ($V_{\text{max}} = 413 \text{ nmol h}^{-1} \text{ g fresh wt.}^{-1}$) and inhibits the conversion of valine and isoleucine into products. Similarly, the linamarin precursor isobutyraldoxime is an excellent substrate ($V_{\text{max}} = 400 \text{ nmol h}^{-1} \text{ g fresh wt.}^{-1}$) and also inhibits oxidn. of the amino acids. The substrate specificity of the oxime-metabolizing step is low and a variety of aliph. oximes are converted to cyanide. On the other hand, the activity of the microsomal ext. is highly selective with regard to the amino acid substrate since, of the aliph. amino acids tested, only valine and isoleucine are metabolized. Product formation from isobutyronitrile (a linamarin precursor) was not demonstrated, but detectable cyanide formation from 2-methylcyanobutane, the corresponding precursor of lotaustralin was obsd. Competition expts. showed that the biosynthesis of

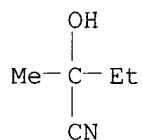
linamarin and lotaustralin is not likely to be catalyzed by sep. enzyme systems.

IT **4111-08-4P**

RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation) (formation of, from isoleucine oxidn. by flax microsomes)

RN 4111-08-4 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)



L23 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2003 ACS

AN 1984:20417 HCAPLUS

DN 100:20417

TI Four aliphatic esters of Chamaemelum fuscatum essential oil

AU De Pascual-T., J.; Caballero, E.; Caballero, C.; Anaya, J.; Gonzalez, M. S.

CS Dep. Org. Chem., Salamanca Univ., Salamanca, Spain

SO Phytochemistry (Elsevier) (1983), 22(8), 1757-9

CODEN: PYTCAS; ISSN: 0031-9422

DT Journal

LA English

AB In addn. to known compds., the esters $\text{H}_2\text{C}:\text{CMeCO}_2\text{CH}_2\text{R}$ [$\text{R} = \text{CMe}:\text{CHMe}-(\text{Z})$, $\text{CMe}(\text{OH})\text{CH}:\text{CH}_2$, $\text{CMe}(\text{OH})\text{COMe}$] and neryl isovalerate were isolated from the essential oil of *C. fuscatum* and their structures were established by spectral methods and by synthesis.

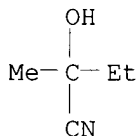
IT **4111-08-4P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and hydrolysis-elimination reaction of)

RN 4111-08-4 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)

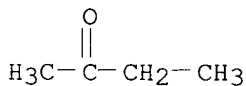


IT **78-93-3**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with sodium cyanide)

RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)

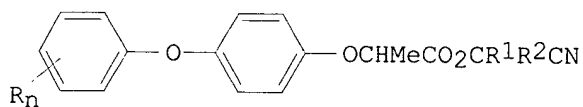


L23 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2003 ACS

AN 1982:6417 HCAPLUS

DN 96:6417
 TI Cyanomethyl .alpha.-(p-phenoxyphenoxy)propionates
 PA Compagnie Francaise de Produits Industriels, Fr.
 SO Fr. Demande, 41 pp. Addn. to Fr. Appl. No. 79 01,020.
 CODEN: FRXXBL
 DT Patent
 LA French
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2473514	A2	19810717	FR 1981-666	19810115
PRAI	US 1980-112352		19800115		
GI					



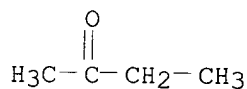
AB Title esters I [n = 1, 2; R = Cl, CF₃; R₁ and R₂ (same or different) are H, alkyl, chlorophenyl, (trifluoromethyl)phenyl, or R₁R₂ = polymethylene], useful as herbicides, were prepd. by different methods. Thus, 4-(4-F₃CC₆H₄O)C₆H₄OCHMeCO₂H was converted to its acid chloride, which was esterified with Me₂C(OH)CN and pyridine to give I (R_n = 4-F₃C, R₁ = R₂ = Me). Herbicidal activity data are presented for I.

IT 78-93-3, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (conversion of, to cyanohydrin)

RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)

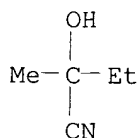


IT 4111-08-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, and esterification of .alpha.-(p-phenoxyphenoxy)propionyl
 chloride deriv. by)

RN 4111-08-4 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)



L23 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2003 ACS

AN 1972:58924 HCAPLUS

DN 76:58924

TI Synthesis of unsaturated aliphatic nitriles

AU Mekhtiev, S. I.; Mamedov, R. G.

CS VNIIolefin, Baku, USSR

SO Azerbaidzhanskii Khimicheskii Zhurnal (1971), (2), 110-15

CODEN: AZKZAU; ISSN: 0005-2531

DT Journal

LA Russian

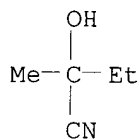
AB Cyanohydrins (I) (80-95% based on **HCN**) were obtained by hydrocyanidation of ketones in the presence of KOH. The stability of I in alk. medium increased with increase of their mol. wt. Alkylacrylonitriles (II) were prep'd. by dehydrating I from MeCOEt, Et₂CO, MeCOPr, and MeCOBu. II (80-2% based on converted I) were obtained at I-P2O5-quinoline mole ratio 1:1.25:1, 60-80.degree., and reaction time 1 hr.

IT **4111-08-4P**

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 4111-08-4 HCAPLUS

CN Butanenitrile, 2-hydroxy-2-methyl- (9CI) (CA INDEX NAME)

IT **74-90-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aliphatic ketones)

RN 74-90-8 HCAPLUS

CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)

IT **78-93-3**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(with **hydrocyanic acid**)

RN 78-93-3 HCAPLUS

CN 2-Butanone (8CI, 9CI) (CA INDEX NAME)

